

EXHIBIT 4



MAYO CLINIC

Crohn's Disease

TREATMENT

Treating inflammatory bowel disease is both a science and an art. Because each case is different, and no single treatment is universally effective, Mayo doctors design regimens to meet each person's unique needs. Those needs often change over time, and as your body responds to treatment, the most effective therapeutic approach is likely to change, too.

People with Crohn's disease often develop inflammation outside the colon — in the joints, eyes or skin. They may have other health problems, too, including anemia, osteoporosis, and gallbladder or liver disease. Mayo's integrated team approach to patient care means that additional medical conditions are evaluated and treated quickly by Mayo specialists who work closely with your primary team.

The last two decades have seen great advances in the understanding of inflammatory bowel disease — especially its genetic component — and in the kinds of therapies available to patients. As more information emerges from research and clinical trials, the number of therapeutic options is likely to continue to evolve and grow.

At Mayo Clinic, doctors involve you in all treatment decisions and collaborate with you to find the approach that will bring you the greatest benefit with the fewest side effects. Your doctors will thoroughly discuss any concerns that you may have about a particular treatment, sometimes pulling in several specialists, so you can make the most informed decisions possible.

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Medications

Medications are the primary treatment for Crohn's disease. The traditional approach to managing Crohn's disease has been to start with the safest drugs first and then switch to stronger medications if first-line drugs fail to relieve your symptoms. But studies by Mayo Clinic researchers have shown that the strongest medications — TNF inhibitors — may reduce symptoms more effectively than immune suppressing drugs, which are commonly tried first. Read more about Mayo Clinic research on TNF inhibitors.

TNF Inhibitors do carry potentially serious risks, and your doctor will carefully weigh these risks against the benefits the drugs can provide.

Although most people can find a combination of medications to successfully manage their disease, a small number aren't helped by current therapies. Some of these patients may be helped by experimental drugs that are now in clinical trials. Talk to your doctor if you are interested in learning more about clinical trials for Crohn's disease.

Surgery

Over time, many people with Crohn's disease need surgery, either because medications don't control their

symptoms or because they develop complications such as a blockage, abscess or perforation. Surgery doesn't cure Crohn's disease, and symptoms may eventually return near the treated area or in other parts of the digestive tract. Yet surgery often provides immediate relief when other treatments fail and may even lead to years of remission. To achieve the best quality of life, Mayo physicians may recommend a combination of medication and surgery for some patients.

Resection

The most common surgical procedure for Mayo patients is resection. During this operation, your surgeon removes a section of diseased tissue in the small or large intestine and reconnects the healthy segments. The goal is always to take as little tissue as possible.

At Mayo Clinic, resections are usually performed using minimally invasive (also called laparoscopic) techniques. Unlike open surgery, which requires a long incision in the abdomen, laparoscopic surgery is done through three or more small "keyhole" incisions. A video camera and surgical instruments are inserted through ports in the incisions, and the surgeon performs the operation using images sent from the camera to a computer monitor. Minimally invasive surgery has long-term outcomes comparable to conventional surgery but offers the benefits of shorter hospital stays, less pain, and an easier recovery.

Strictureplasty

When possible, Mayo Clinic surgeons perform a bowel-saving procedure called strictureplasty to widen a narrowing (stricture) in the small intestine. Patients who undergo many resections of the small bowel may eventually develop "short gut" syndrome — a complication that occurs when the intestine is no longer able to absorb nutrients.

Strictureplasty helps prevent shortening of the bowel by repairing tissue rather than removing it. Mayo surgeons have decades of experience performing such bowel-sparing operations. Strictureplasty may also be used to repair fistulas or treat pockets of infection (abscesses) that don't respond to antibiotics.

Nutrition

Many people with Crohn's disease, especially those who undergo resections, have trouble maintaining a healthy weight and absorbing vitamins, minerals, protein, fluids and other vital nutrients. For these patients, Mayo Clinic provides the services of dietitians and nutritionists with special expertise in inflammatory bowel disease.

Mayo also offers home parenteral nutrition support for people with severe digestive problems. Parenteral nutrition supplies nutrients through an IV line, and so bypasses digestion in the stomach and intestine. Care providers at Mayo Clinic continually monitor each patient to minimize complications and to provide the greatest nourishment. This expert care helps patients resume a normal diet as quickly as possible. Read more about [home parenteral nutrition](#).

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